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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/813,576	03/21/2001	Anindya Chakraborty	43997	2729

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THE LAW OFFICE OF KIRK D. WILLIAMS
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EXAMINER
GREY, CHRISTOPHER

ART UNIT	PAPER NUMBER
2667	

DATE MAILED: 12/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO 90C (Rev 10/03)

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 March 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) *1-34* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

    1.☐ Certified copies of the priority documents have been received.

    2.☐ Certified copies of the priority documents have been received in Application No. _____.

    3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Specification

1.   The specification is objected to as failing to provide proper antecedent basis for

the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction

of the following is required: Bulk and transactional revising must be clearly explained

within the specification in order to be encompassed within claim 12.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of
> making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the
> art to which it pertains, or with which it is most nearly connected, to make and use the same and shall
> set forth the best mode contemplated by the inventor of carrying out his invention.

2.   Claim 12 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply

with the written description requirement. The claim(s) contains subject matter which

was not described in the specification in such a way as to reasonably convey to one

skilled in the relevant art that the inventor(s), at the time the application was filed, had

possession of the claimed invention.

Examiner's note: Bulk and transactional revising a second database with additional

transaction requests is not discussed within the specification.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3.   Claims 1-11, 13-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rastogi et al. (US 6205449) in view of Mikkelsen et al. (US 6789178)

Claim 1, 13   Rastogi et al. ('Rasogi' hereinafter) discloses a method/system for allowing a secondary computer/ database (see element 120 in fig 1) to be operated as a hot spare (standby). Rastogi discloses a primary database residing on a primary computer (element 110 in Fig 1) and associated with a transaction logger that maintains (transaction updating) log records of transactions/entries. Rastogi also discloses a transaction processor that transmits the log records to the secondary database (transaction updating in the secondary database). The logs in both the primary and secondary databases ensure that the transactions that are transmitted are applied (bulk updating). Rastogi discloses keeping the secondary system in continuous synchronization with the primary system (disclosed in Col 3 line 9- Col 4 line 2). Rastogi does not disclose transaction updating the second database with the new transaction request before the bulk updating is complete.

Mikkelsen et al. ('Mikkelson' hereinafter) discloses a method/system designed to maintain the synchronization across multiple data recording devices and controllers (databases/storage devices). Mikkelsen discloses a primary storage device that sends update information (update information descriptor) in the form of an identifier/indicator to a secondary storage device. The secondary controller/device receives the update information (transaction update) that triggers the secondary data recording device to

record (bulk updating) the appropriate information at the appropriate location. The secondary controller sends an acknowledgement to the primary to indicate successful updating. Before the transaction is complete an acknowledgement may be sent to the primary controller indicating that the update has been stored and will be carried out later (Disclosed in Col 8 line 63- Col 9 line25), giving rise to new update information (transaction updating) being passed to the secondary device.

Therefore it would have been obvious to one of the ordinary skill in the art at the time of the invention to combine the method/ system of maintaining synchronization in a hot spare database disclosed within Rasogi's invention, with the method/system disclosed by Mikkelson who discloses sending update information between a primary and secondary storage device in order to accomplish synchronization. The motivation for this combination is to improve availability of information stored and to reduce the time and/or resources required to restore access to a storage device after a disaster or abnormal event (Mikkelson: Col 4 line 55-60).

Claim 2   Rasogi discloses a primary database (active) residing on a primary computer (element 110 in Fig 1). Rastogi discloses a secondary computer/ database (see element 120 in fig 1) being operated as a hot spare (Col 2 lines 45-50). The motivation is the same as that for claim 1.

Claim 3   Rastogi discloses keeping the secondary system in continuous synchronization (resynchronization/reconciliation) with the primary system (disclosed in Col 3 line 9- Col 4 line 2). The motivation is the same as that for claim 1.

Claim 4   Rastogi does not disclose bulk updating including sending a plurality of

bulk update messages from the active device to the standby device.

Mikkelson discloses sending one or more (plurality) commands (bulk update

messages) to a secondary storage device, triggering the secondary device to record the

corresponding information onto a secondary storage medium (Col 5 line 8-21). The

motivation is the same as that for claim 1.

Claim 5   Rastogi discloses a transaction processor that transmits the log records to

the secondary database (transaction updating in the secondary database). The

motivation is the same as that for claim 1.

Claim 6   Rastogi discloses a dirty page table that keeps a record of updates

(disclosed in Col 7 line 63- Col 8 line 2) but does not disclose grouping a plurality of

entries.

Mikkelson discloses the information (plurality) being sent to the secondary device

containing an update information descriptor that specifies (grouping) a time stamp,

identifiers, location, and the content of information to be written (disclosed in Col 8 line-

63 Col 9line 11), giving rise to the ease of grouping. The motivation is the same as that

for claim 1.

Claim 7, 8   Rastogi does not disclose bulk updating including sending a plurality of

bulk update messages from the active device to the standby device.

Mikkelson discloses sending one or more (plurality) commands (bulk update

messages) to a secondary storage device, triggering the secondary device to record

(bulk update) the corresponding information onto a secondary storage medium (Col 5

line 8-21). The motivation is the same as that for claim 1.

Claim 9   Rastogi discloses the secondary device acting as a hot spare (standby)

where the network switches from a primary database to a secondary database upon ·

fault (Col 3 lines 35-46). The motivation is the same as that for claim 1.

Claim 10   Rastogi discloses keeping the secondary system in continuous

synchronization (resynchronization/reconciliation) with the primary system (disclosed in

Col 3 line 9- Col 4 line 2). The motivation is the same as that for claim 1.

Claim 11   Rastogi discloses a dirty page table (element 260 Fig 2) that keeps a

record of updates (disclosed in Col 7 line 63- Col 8 line 2). The motivation is the same

as that for claim 1.

Claim 13   Rastogi discloses primary and secondary computers/databases (elements

121 and 111 in Fig 1). The motivation is the same as that for claim 1.

Claim 27, 28, 29, 32, 33   Rastogi discloses system/ method comprising a primary

(active) database (apparatus) and parameters associated with that primary database

indicating the relative synchronization of both the primary and a secondary (standby)

database. Rastogi also discloses a transactional logger associated with the primary

database that maintains the log records of transactions. Rastogi discloses a tranaction

processor that transmits log records to the secondary database triggering updating (Col

2 lines 23-44). Rastogi does not disclose the active controller updater composing a

plurality of transactional update messages prior to the indication that none of the

plurality of entries requires bulk synchronization.

Mikkelsen et al. ('Mikkelson' hereinafter) discloses a method/system designed to maintain the synchronization across multiple data recording devices and controllers (databases/storage devices). Mikkelsen discloses a primary storage device that sends update information (update information descriptor) in the form of an identifier/indicator to a secondary storage device. The secondary controller/device receives the update information (transaction update) that triggers the secondary data recording device to record (bulk updating) the appropriate information (or no information) at the appropriate location. The secondary controller sends an acknowledgement to the primary to indicate successful updating. Before the transaction is complete an acknowledgement may be sent to the primary controller indicating that the update has been stored and will be carried out later (Disclosed in Col 8 line 63- Col 9 line25), giving rise to new update information (transaction updating) being passed to the secondary device. The motivation is the same as that for claim 1.

Claim 14, 15, 34   Rastogi discloses a dirty page table that keeps a record of updates (disclosed in Col 7 line 63- Col 8 line 2). Rastogi also discloses a transaction processor that transmits log records (transactional updating) to a secondary storage device (disclosed in Col 3 lines 35-46), but does not disclose determining if a group of entries is subject to a bulk update technique and grouping a plurality of entries.

Mikkelson discloses the information (plurality) being sent, containing an update information descriptor that specifies (grouping) a time stamp, identifiers, location, and the content of information to be written (disclosed in Col 8 line-63 Col 9line 11), giving rise to the ease of grouping. The receipt of the update information (transaction update)

triggers the recording (bulk updating) of the appropriate information (or no information) at the appropriate location (Disclosed in Col 8 line 63- Col 9 line25). The motivation is the same as that for claim 1.

Claim 16, 17   Rastogi discloses a transaction processor (see fig 1) for transmitting log records (transactional updating). After log records are received, a secondary system (see element 120 in Fig 1) applies (bulk updates) the log records (disclosed in Col 3 lines 48- Col 4 line 2). The motivation is the same as that for claim 1.

Claim 18   Rastogi does not disclose sending a bulk update message.

        Mikkelson discloses sending one or more (plurality) commands (bulk update messages) to a secondary storage device, triggering the secondary device to record the corresponding information onto a secondary storage medium (Col 5 line 8-21). The motivation is the same as that for claim 1.

Claim 19   Rastogi discloses a transaction processor that transmits log records (transactional update messages) to a secondary storage device (disclosed in Col 3 lines 35-46). The motivation is the same as that for claim 1.

Claim 20   Rastogi does not disclose initiating a first bulk update including the new request if the particular group of entries is subject to the bulk update technique.

        Mikkelson discloses a pending mode in which indicators of updated information is stored, and write requests (new bulk updates) are received from a host (disclosed in Col 10 lines 6-47). The pending mode is succeeded by a duplexing mode that records the appropriate information at the appropriate location (disclosed in Col 9 lines 16-26). The motivation is the same as that for claim 1.

Claim 21   Rastogi does not disclose initiating a second bulk update for the particular

group of entries prior to receiving a new request.

Mikkelson discloses a number of different operating modes; duplexing,

suspended, and pending, in which a primary controller operates alternatively. The

operation of these different modes results in constant updating as is appropriate, and

can read on bulk updating prior to receiving a new request (see claim 20). The

motivation is the same as that for claim 1.

Claim 22, 23   Rastogi does not disclose an acknowledgment and updating the

indication of the need for a bulk update technique.

Mikkelson discloses a positive (claim 22) or negative (claim 23)

acknowledgement being indicating if a write is successful or not (disclosed in Col 9 lines

17-33). This acknowledgment is sent to the primary controller for verification (update).

The motivation is the same as that for claim 1.

Claim 24   Rastogi does not disclose a second transactional acknowledgement.

Mikkelson discloses a number of different operating modes, where the

duplexing mode is experienced a number of times. At the end of this mode, an

acknowledgement is sent each time this mode is repeated (see claim 22 and 23). The

motivation is the same as that for claim 1.

Claim 25   Rastogi discloses a primary database (active) residing on a primary

computer (element 110 in Fig 1). Rastogi discloses a secondary computer/ database

(see element 120 in fig 1) being operated as a hot spare (Col 2 lines 45-50). The

motivation is the same as that for claim 1.

<u>Claim 26</u>   Rastogi discloses primary and secondary computers/databases (elements 121 and 111 in Fig 1). The motivation is the same as that for claim 1.

<u>Claim 30</u>   Rastogi discloses the secondary computer having a secondary database to which the log records generated in the primary database are updated (disclosed in Col 3 line 48- Col 4 line 2). The motivation is the same as that for claim 1.

<u>Claim 31</u>   Rastogi discloses the secondary computer having a secondary database to which the log records generated in the primary database are updated (disclosed in Col 3 line 48- Col 4 line 2). The motivation is the same as that for claim 1.

4.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Christopher P Grey whose telephone number is

(571)272-3160. The examiner can normally be reached on 6:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Chi Pham can be reached on (571)272-3179. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

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you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Christopher Grey
Examiner
Art Unit 2667

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SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600   11/29/04